Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in this application.

Listing of Claims

1. (Previously presented) A method of detecting nodes for wireless communications between nodes forming a wireless network, comprising the steps of:

recurrently sending from a node forming a part of the wireless network a message for detection by any new node; and

in a new node, monitoring for detection of said message and for wireless network traffic, responding to detection of said message by sending a reply, responding to wireless network traffic by waiting for a pause in the wireless network traffic and sending a message during the pause to indicate the presence of the new node, and otherwise recurrently sending a message for detection by any other node.

2. (Original) A method as claimed in claim 1 wherein the nodes comprise multiple beam directional antennas, and the step of recurrently sending from a node forming a part of the wireless network a message for detection by any new node comprises recurrently sending said message on antenna beams not carrying wireless network traffic.

3. (Previously presented) A method as claimed in claim 1 wherein the nodes comprise multiple beam directional antennas, and the step of recurrently sending a message for detection by any other node from a new node comprises recurrently sending said message on each of a plurality of antenna beams.

4. (Previously presented) A method as claimed in claim 1 wherein the nodes comprise multiple beam directional antennas, and the step of, in a new node, monitoring for detection of said message and for wireless network traffic comprises successively monitoring using each of a plurality of antenna beams.

5. (Original) A method as claimed in claim 4 wherein the step of successively monitoring using each of a plurality of antenna beams uses a subset of overlapping antenna beams of the node.

6. (Original) A method as claimed in claim 4 wherein the nodes comprise main and diversity receive paths, and the step of successively monitoring using each of a plurality of antenna beams comprises monitoring using the main and diversity receive paths simultaneously for antenna beams having different directions.

7. (Original) A method as claimed in claim 5 wherein the nodes comprise main and diversity receive paths, and the step of successively monitoring using each of a plurality of antenna beams comprises monitoring using the main and diversity receive paths simultaneously for antenna beams having different directions.

8. (Previously presented) A method as claimed in claim 1 wherein the wireless communications comprise a plurality of frequency channels, and the step of, in a new node, monitoring for detection of said message and for wireless network traffic comprises successively monitoring for each of a plurality of the frequency channels.

9. (Previously presented) A method as claimed in claim 1 wherein the wireless communications comprise a plurality of frequency channels, and the step of recurrently sending a message for detection by any other node from a new node comprises recurrently sending said message using each of a plurality of the frequency channels.

10. (Previously presented) A method as claimed in claim 9 wherein the nodes comprise multiple beam directional antennas, and the step of recurrently sending a message for detection by any other node from a new node further comprises recurrently sending said message on each of a plurality of antenna beams.

11. (Previously presented) A method as claimed in claim 10 wherein the step of, in a new node, monitoring for detection of said message and for wireless network traffic comprises successively monitoring using each of a plurality of antenna beams.

12. (Original) A method as claimed in claim 11 wherein the step of successively monitoring using each of a plurality of antenna beams uses a subset of overlapping antenna beams of the node.

13. (Original) A method as claimed in claim 11 wherein the nodes comprise main and diversity receive paths, and the step of successively monitoring using each of a plurality of antenna beams comprises monitoring using the main and diversity receive paths simultaneously for antenna beams having different directions.

14. (Currently amended) A method as claimed in claim 1 wherein the wireless communications comprise a plurality of frequency channels, the method further comprising the step of, in each node which communicates with another node of the wireless network using a given frequency, compiling a list of preferred frequencies for potential use for ~~such~~ communications with said another node of the wireless network in the event of failure of ~~such~~ said communications using the given frequency.

15. (Currently amended) A method as claimed in claim 14 and further comprising the steps of, in a said node which communicates with another node using a given frequency, detecting failure of ~~such~~ said communications using the given frequency, sending an indication of a preferred frequency from its list via other communications paths of the wireless network, and sending to said another node a message to use the preferred frequency for restoring the failed communications.

16. (Original) A node for a wireless access network, the node comprising an access radio system for bidirectional wireless communications with wireless terminals, a transit radio system for bidirectional wireless communications with at least one other node of the network, and a communications control unit for coupling signals to be communicated between the access radio system and the transit radio system, the control unit being arranged for operation of the node in accordance with the method of claim 1.

17. (Original) A node as claimed in claim 16 wherein the transit radio system comprises a multiple beam directional antenna.

18. (Original) A node as claimed in claim 17 wherein the transit radio system and its antenna comprise main and diversity receive paths.

19. (Original) A wireless access network comprising a plurality of nodes each as claimed in claim 17.

20. (Original) A wireless access network as claimed in claim 19 and including a connection of one of the nodes to a communications network.

21. (Currently amended) A method of detecting nodes for wireless communications between nodes forming a wireless network, comprising the steps of:

recurrently sending from a node forming a part of the wireless network a message for detection by any new node; and

in a new node, monitoring for detection of said message and/or for wireless network traffic, responding to ~~such~~ detection of said message and/or wireless network traffic, and in the absence of ~~such~~ detection of said message and/or wireless network traffic recurrently sending a message for detection by any other node;

wherein the wireless communications comprise a plurality of frequency channels, the method further comprising the step of, in each node which communicates with another node of the wireless network using a given frequency, compiling a list of preferred frequencies for potential use for ~~such~~ communications with said another node of the wireless network in the event of failure of ~~such~~ said communications using the given frequency.

22. (Currently amended) A method as claimed in claim 21 and further comprising the steps of, in a said node which communicates with another node using a given frequency, detecting failure of ~~such~~ said communications using the given frequency, sending an indication of a preferred frequency from its list via other communications paths of the wireless network, and sending to said another node a message to use the preferred frequency for restoring the failed communications.